

# COLLEGE EXPANDS CURRICULUM

## *Attend the Advanced Production and Quality Management Course*

*Lt. Col. George A. Noyes III, USAF*

**O**n December 7, 1945, the Imperial Japanese Navy bombed Pearl Harbor. The leader of the expedition, Admiral Yamamoto, was quoted as saying "I'm afraid we have awoken [sic] a terrible sleeping giant." Many folks mistakenly think that Admiral Yamamoto was referring to America's military might. He was not. He was providing a veiled glimpse into the industrial capability of the United States. America had the raw materials, factory capacity, labor and engineering know-how to develop, produce and deploy an amazing array of weaponry upon an unsuspecting enemy.

Twenty years later America was once more under attack, not from armed forces, but from the assault of Japanese manufacturing techniques. The Massachusetts Institute of Technology's Commission on Industrial Productivity noted in a book, *Made in America*, that the 1960s were the beginning of the demise of many industrial sectors, including textiles, electronics, steel and automobiles. It seems as though the "Giant" went back to sleep. What happened...and what can we do about it?

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Can mid- to senior-level acquisition professionals learn to combat the threat to our industrial base by making and throwing paper airplanes in a class at DSMC? Evidently, there are many different ways adults can learn. An unknown author was once quoted as saying, "I hear and I forget; I see and I remember; I do and I understand." Thus, seeing students on the floor on their hands and knees calculating settings on a catapult to launch a plastic ball into a coffee cup some 120 inches away, is learning.

The Advanced Production and Quality Management Course (APQMC) is a two-week capstone, senior-level course directed at personnel in the Manufacturing and Production, Quality Assurance/Engineering and Scientist career paths. Significant portions of the course use statistical and quality planning tools and techniques to aid the learning process. Many of the in-class learning objectives are ac-



*Students of The Advanced Production and Quality Management Course, DSMC, participate in a catapult exercise to learn about Design of Experiments. From left: Gene Nelson, Carolyn Shelton, James Reese, Patricia Whittington, Rosi Mitchell.*

complished with hands-on learning rather than the old methodology of "Death by Viewgraph."

The topics covered are emerging as "state-of-the-art" techniques for identifying and reducing risks as practiced by world-class producers. General

Motors, Ford and Chrysler all used high-performance teams to develop next-generation automobiles to compete on a global basis. These teams use such tools and techniques as Concurrent Engineering, and Integrated Product and Process Development to shorten the development cycle and bring a product to market with fewer problems, higher quality and reliability, and at a reduced cost.

Students launch catapults to learn about Design of Experiments, and move poker chips from buffer-to-buffer to understand Theory of Constraints. Lessons on capturing customer requirements have students building a



Photo by Ed Boyd

"House of Quality" on a World Class Cup of Coffee to get hands-on experience with Quality Function Deployment. Building "Little Red Wagons" helps students learn about bottlenecks and Herbies as they model their factory floor in a simulation exercise. Prominent government and industry guest lecturers present timely examples of how these tools are being applied, while course instructors give

hands-on demonstrations and exercises that facilitate student learning in these areas.

Our professors keep abreast of changes in the manufacturing environment by attending seminars, visiting facilities, and engaging in timely research. Visits to Boeing (777 and F-22 program), GM Design Center and Black & Decker provide evidence that these new processes work. Research and consulting on such activities as the Air Force's Lean Aircraft Initiative allows us to work with aerospace leaders and with leading academic institutions such as MIT, Harvard and Georgia Tech. Finally, our benchmarking initiative shows clearly that DSMC is providing a competitive academic environment. A side-by-side comparison of APQMC and the MIT Graduate Introduction to Aerospace Engineering showed a very high level of correlation between the two offerings.

Strangely, the level of interest in, and capability to provide management attention to design (producibility) and manufacturing (capability) issues is dismally small on most programs. It doesn't have to be that way. Dr. Walter LaBerge, Visiting Professor of the University of Texas at Austin and one of the principal inventors of the Sidewinder air-to-air missile, was once quoted as saying:

Persons should not be allowed to become PMs until they have had a garage check. That is, they must like to work with their hands and understand the process of building something if we are to expect them to be successful program managers.

Our leading universities are taking note of this delinquency, and are starting to build into curriculum experiences situations in which students actually build things. Today, APQMC is a leader in providing hands-on learning, practical exercises and distinguished senior-level guest lecturers.

## WANTED!

### *DSMC Press Needs One- Column Fillers*

Help us fill an empty space in our lives! Contribute short, one-column fillers (about 200 words) to round out our bimonthly issues of Program Manager.

Why not write about some program or event that propelled you to a better future in acquisition or made your job in the acquisition arena easier. Reflect on your career, and put in writing those events that could be characterized as —

- Inspiring
- Paradigm-breaking
- Thought provoking

Think of your potential article as a kind of "mini" lessons learned. Send your articles to the following address:

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Wherever possible, send us the electronic media on a 3½" disk along with a printed copy of the article. Another option is to attach the document to an Internet or E-Mail message. Good luck with your writing — and we'll look forward to hearing from you.